

## Remarks

### *Support for New Claims*

New claims 59-62 have been added. Support for these claims are found in Figure 4. In Example 6 depicted in Figure 4, *Brassica juncea* plants were grown for 4 weeks, at which times five different levels (5, 10, 20, 30, and 40 mg) of sodium selenate were added to the growth medium. Plants were grown for an additional week, at which time shoots were harvested and total Se concentration was determined. The plant had accumulated selenium in its edible portions to a concentration of at least about 2000 mg/kg dry weight at the 20 mg treatment level, 1500 mg/kg dry weight at the 10, 30 or 40 mg treatment level, and about 500 mg/kg at the 5 mg treatment level. Applicants respectfully submit that new claims 59-62 are fully supported by the specification and figures, and therefore, no new matter is being added.

### *Rejection under 35 USC § 112, first paragraph*

Claims 50 and 52-58 have been rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the invention was filed, had possession of the claimed invention. Specifically the Examiner states that there is no support for the limitations “several thousand fold higher”, “7500 fold higher” of more selenium in edible portions of the plant than in the environment the plant is growing, and “several thousand mg/kg dry weight”, and “8000 mg/kg dry weight”. Applicant profusely apologizes for an inadvertent mathematical error (the use of 1 L/g in calculations rather than 1 mL/g) and has amended the claims to reflect the specification’s disclosure.

Applicant has cancelled claim 50 and amended claims 49, 52 and 54 to read “several fold higher” and “7.5 fold higher” of more selenium in edible portions of the plant than in the environment the plant is growing. Table 2 on page 12 shows a concentration of 754 mg/kg of Se at 0.1 g/L. The following calculation results:

$$(1 \text{ mL/g}) * (1/1000 \text{ mL}) * (1000 \text{ g/kg}) = 1 \text{ L/kg [density of water]}$$

$$(1000 \text{ mg/g}) * (.1 \text{ g/L}) * (1 \text{ L/kg}) = 100 \text{ mg/kg}$$

Table 2 on page 12 shows a Se concentration of approximately 754 mg/kg (resulting from 100 mg/kg of Se in the environment) or several fold higher of more selenium in edible portions of the plant than in the environment the plant is growing.

Furthermore, claims 49, 50 and 52-58 have been rejected under 35 U.S.C. § 112, first paragraph, as not enabling any person skilled in the art to which it pertains, or with which it is most nearly connect, to make and/or use the invention commensurate in scope with these claims. Specifically, Examiner states that while the specification is enabling for a method of accumulating Se concentration of up to 400 ppm or 2500 mg/kg of dry weight in edible Brassicaceae plant, it does reasonably provide enablement for a method that allows accumulation of Se of several thousand folds higher than that of the environment.

Applicant has cancelled claim 50 and amended claims 49, 52-58 to reflect a method of accumulating Se concentration that is “several folds higher” than the Se concentration of its environment. Applicant respectfully points to Table 2 (and the above argument) for support of these amendments. Table 2 show the results of the analysis for metal content of Example 1. Specifically, Example 1 teaches a method of accumulating Se in *Brassica juncea* by growing the plants in hydroponics media treated with various concentrations of Se in the form of Na<sub>2</sub>SeO<sub>4</sub>.

However, Applicant respectfully traverses the rejection that the specification does not reasonably provide enablement for a method that allows accumulation of Se of “several thousand mg/kg dry weight.” Examiner notes that Applicant teaches that a concentration of 2,500 mg/kg was achieved at a 20 mg treatment level (Example 6, Figure 4). As it is well known in the art and as provided by Merriam-Websters dictionary, “several” is defined as “more than one” or “more than two but fewer than many.” Therefore, Applicant respectfully submits that a concentration of several thousand mg/kg is supported and enabled by the specification because a concentration of 2,500 mg/kg is supported and enabled by the specification.

Applicant therefore respectfully submits that claims 49, 52-58 and new claims 59-62 are fully supported and enabled through the amended scope of the claims. Accordingly, Applicant respectfully requests that these rejections be reconsidered and withdrawn.

#### ***Rejection under 35 USC § 112, second paragraph***

Claims 49-58 have been objected to under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More particularly, Examiner points out that the claims lack a preamble because they recite simply a “method comprising.”

Applicant has amended claims independent claims 49 and 51 to include a “method of producing an edible plant whose edible portions comprise significant concentrations of selenium, comprising...” Claim 50 has been cancelled. Claims 52-58, and new claims 59-62, depend from claims 49 and 51. Therefore, Applicant respectfully requests that the objection of the claims under 35 U.S.C. § 112, second paragraph, be withdrawn.

### ***Rejection under 35 USC § 102***

Claims 49 and 55-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Banuelos et. al. Examiner states that Banuelos teaches a method of accumulating Se in Brassica juncea by growing said plants in a soil containing Se concentration of from 0.1 to 1.2 mg/kg and harvesting the plants wherein the Se concentration in the harvested shoot was more than 1 mg/kg dry matter.

Independent claim 49 of the present invention teaches a method of producing an edible plant whose edible portions comprise significant concentrations of selenium, that includes, wherein the step of harvesting comprises harvesting the plant after it has accumulated selenium in its edible portions to a concentration that is several fold higher than that of the selenium in the environment. Claims 55-58 depend from independent claim 49.


Specifically, the present invention teaches a method of growing said plants in a soil containing Se concentration of 100 mg/kg (0.1 g/L) and harvesting the plants wherein the Se concentration in the harvested shoot was more than 750 mg/kg dry weight. Therefore, the step of harvesting of the present invention comprises harvesting the plant after it has accumulated selenium in its edible portions to a concentration that is about 7.5 fold higher than that of the selenium in the environment.

Banuelos does not teach a step of harvesting comprising harvesting the plant after it has accumulated selenium in its edible portions to a concentration that is about several, or specifically 7.5, fold higher than that of the selenium in the environment. Instead, Banuelos teaches a method of accumulating Se in an edible plant to a concentration that is about the same as that of the selenium in the environment (e.g. about 1 - 1.2 mg/kg dry matter from a soil concentration of 0.1 to 1.2 mg/kg). See Banuelos, Table 2. Furthermore, Banuelos makes no teaching or suggestion of manipulating the environment of the plant during cultivation to enhance the uptake of Se to a concentration that is about 7.5 fold higher than that of the selenium

in the environment. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance is earnestly solicited. Please charge any necessary fees or credit any overpayments to our Deposit Account No. 03-1721.

Respectfully submitted,

  
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